



## THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Joerg Schneider, Sarah C. Gilbert, Carolyn M. Hannan and Adrian V.S. Hill

Application No.: 10/088,677 Group: 1645

371(c) Date: May 31, 2002 Examiner: Robert A. Zeman

Confirmation No: 4825

For: USE OF REPLICATION-DEFICIENT ADENOVIRAL VECTOR TO BOOST  
CD8+ T CELL IMMUNE RESPONSE TO ANTIGEN

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### FIFTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

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Sir:

This Fifth Supplemental Information Disclosure Statement is submitted:

under 37 CFR 1.97(b), or  
(Within any one of the following time periods: three months of filing national application (other than a CPA) or date of entry of the national stage in an international application; or before the mailing date of a first office action on the merits in a non-provisional application, including a CPA, or a Request for Continued Examination).

under 37 CFR 1.97(c) together with either:  
 a Statement under 37 CFR 1.97(e), as checked below, or  
 a \$180.00 fee under 37 CFR 1.17(p), or  
(After the 37 CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)

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 a \$180.00 fee under 37 CFR 1.17(p), or  
(Filed after final action or notice of allowance, whichever occurs first, but on or before payment of the issue fee)

under 37 CFR 1.97(i):  
Applicant requests that the IDS and cited reference(s) be placed in the application file.  
(Filed after payment of issue fee)

Statement Under 37 CFR 1.97(e)

- Each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement; or
- No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

## Statement Under 37 CFR 1.704(d) (Patent Term Adjustment)

*Applies to original applications (other than design) filed on or after May 29, 2000*

- Each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the Information Disclosure Statement.
- Enclosed herewith is a Listing of References:
  - Copies of the cited references B14-B17 and C186-C226 are enclosed.
    - Copies of issued U.S. patents and published U.S. applications are not required and are not being provided.
- Copies of the cited references are enclosed except those entered in prior application, U.S. Application No. [ ], to which priority under 35 U.S.C. 120 is claimed. [OPTIONAL [The earlier application contains copies of the cited references.]
- The listed references were cited in the enclosed International Search Report in a counterpart foreign application.
- The “concise explanation” requirement (non-English references) for reference(s) [ ] under 37 CFR 1.98(a)(3) is satisfied by:
  - the explanation provided on the attached sheet.
  - the explanation provided in the Specification.
  - submission of the enclosed International Search Report.
  - submission of the enclosed English-language version of a foreign Search Report and/or foreign Office Action.
  - the enclosed English language abstract.

Applicant requests that the following non-published pending applications be considered:  
*(Affix a label or apply the stamp "Non-Published IDS Reference - Do Not Scan" to the front of each unpublished pending appl'n.)*

Examiner's  
Initials

\_\_\_\_ U.S. Patent Application No. [ ], by [inventor(s)], filed [ ], Docket No.: [ ]  
 \_\_\_\_ U.S. Patent Application No. [ ], by [inventor(s)], filed [ ], Docket No.: [ ]  
 \_\_\_\_ U.S. Patent Application No. [ ], by [inventor(s)], filed [ ], Docket No.: [ ]

\_\_\_\_ Examiner

\_\_\_\_ Date

A copy of each above-cited application, including the current claims, is enclosed, except any application filed on or after June 30, 2003, which has been scanned into the PTO's Image File Wrapper (IFW) system and is available to the examiner.

A copy of each above-cited application, including the current claims, is enclosed, except those entered in prior application, U.S. Application No. [ ], to which priority under 35 U.S.C. 120 is claimed.

The Examiner is requested to return a copy of the above list of pending applications indicating which references were considered with the next office communication.

It is requested that the information disclosed herein be made of record in this application.

Method of payment:

A check for the fee noted above is enclosed, or the fee has been included in the check with the accompanying Reply. A copy of this Statement is enclosed.

Please charge Deposit Account 08-0380 in the amount of \$[ ]. A copy of this Statement is enclosed.

Please charge any deficiency in fees and credit any overpayment to Deposit Account 08-0380.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

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Dated: *August 30, 2007*

Substitute for form 1449B/PTO		ATTORNEY DOCKET NO. 3022.1004-000	APPLICATION NO. 10/088,677
<b>FIFTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT IN AN APPLICATION</b>		FIRST NAMED INVENTOR Joerg Schneider	
<b>LISTING OF REFERENCES</b>		EXAMINER Robert A. Zeman	CONFIRMATION NO. 4825
<b>AUGUST 30, 2007 SEP 04 2007</b> (Use several sheets if necessary)		GROUP 1645	

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL	REF. NO.	DOCUMENT NUMBER Number-Kind Code (if known)	ISSUE DATE / PUBLICATION DATE MM-DD-YYYY	NAME OF PATENTEE OR APPLICANT OF CITED DOCUMENT
	A20	2004/0018177 A1	01-29-2004	Hill, <i>et al.</i>

**FOREIGN PATENT DOCUMENTS**

		DOCUMENT NUMBER Country Code-Number-Kind Code (if known)	DATE MM-DD-YYYY	NAME OF PATENTEE OR APPLICANT OF CITED DOCUMENT	TRANSLATION YES      NO
	B14	WO 01/21201 A2	03-29-2001	Isis Innovation Limited	
	B15	WO 01/085932 A3	11-15-2001	Aventis Pasteur Limited and Ludwig Institute for Cancer Research	
	B16	WO 02/068654 A3	09-06-2002	Centro de Ingenieria Genetica y Biotecnologia	
	B17	WO 2005/030964 A1	04-07-2005	Oxxon Therapeutics Limited	

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

C186	"AIDS Vaccines Trials Dangerous," Isis News No. 11/12, Ho, M., ed., <i>Institute of Science in Society</i> [online], October 2001. Retrieved from the Internet, [retrieved on 2006]
C187	Altman, J.D., and Feinberg, M.B., "HIV Escape: There and Back Again," <i>Nature Med.</i> 10(3): 229-230 (2004).
C188	Borrow, P., <i>et al.</i> , "Virus-Specific CD8 <sup>+</sup> Cytotoxic T-Lymphocyte Activity Associated with Control of Viremia in Primary Human Immunodeficiency Virus Type 1 Infection," <i>J. Virology</i> 68(9): 6103-6110 (1994).
C189	Brander, C. and Walker, B.D., The HLA Class I Restricted CTL Response in HIV-1 Infection: Systematic Identification of Optimal Epitopes. HIV Molecular Immunology Database [online], February 2002 [retrieved on 2006-10-19], Retrieved from the Internet <URL: <a href="http://www.hiv-web.lanl.gov">http://www.hiv-web.lanl.gov</a> >.
C190	Desrosiers, R.C., "Prospects for an AIDS Vaccine," <i>Nature Med.</i> 10(3):221-223 (2004).

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<b>OTHER DOCUMENTS</b> ( <i>Including Author, Title, Date, Pertinent Pages, Etc.</i> )			
C191	Dose-Ranging Study to Evaluate the Safety & Immunogenicity of a HIV Vaccine 732461 in Healthy HIV Seronegative Volunteers [online], February 2007 [retrieved on 2007-03-07], Retrieved from the Internet <URL: <a href="http://www.clinicaltrials.gov">http://www.clinicaltrials.gov</a> >.		
C192	'Epitope Maps', HIV Molecular Immunology Database, [online] [Retrieved from the Internet on June 23, 2003]. <URL: <a href="http://hiv-web.lanl.gov/content/immunology/maps/maps.html">http://hiv-web.lanl.gov/content/immunology/maps/maps.html</a> >		
C193	Fang, Z.-Y., <i>et al.</i> , "Expression of Vaccinia E3L and K3L Genes by a Novel Recombinant Canarypox HIV Vaccine Vector Enhances HIV-1 Pseudovirion Production and Inhibits Apoptosis in Human Cells," <i>Virology</i> 291:272-284 (2001).		
C194	Friedrich, T.C., <i>et al.</i> , "Reversion of CTL Escape - Variant Immunodeficiency Viruses <i>in vivo</i> ," <i>Nature Med.</i> 10(3):275-281 (2004).		
C195	Hu, S.-L., "Non-Human Primate Models for AIDS Vaccine Research," <i>Curr. Drug Targets Infect. Disord.</i> , 5(2):193-201 (2005).		
C196	Kmiecik, D., <i>et al.</i> , "Enhancement of Cellular and Humoral Immune Responses to Human Immunodeficiency Virus Type 1 Gag and Pol by a G/P-92 Fusion Protein Expressing Highly Immunogenic Gag p17/p24 and Pol p51 Antigens," <i>J. Hum. Virol.</i> 4(6):306-316(2001).		
C197	Koziel, M.J., "The Role of Immune Responses in the Pathogenesis of Hepatitis C Virus Infection," <i>J. Viral Hepatitis</i> 4(2):31-41 (1997). Abstract only provided.		
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C199	Leslie, A.J., <i>et al.</i> , "HIV Evolution: CTL Escape Mutation and Reversion After Transmission," <i>Nature Med.</i> 10(3):282-289 (2004).		
C200	Letvin, N.L., "Progress Toward an HIV Vaccine," <i>Annu. Rev. Med.</i> 56:213-223 (2005).		
C201	Matano, T., <i>et al.</i> , "Administration of an Anti-CD8 Monoclonal Antibody Interferes with the Clearance of Chimeric Simian/Human Immunodeficiency Virus during Primary Infections of Rhesus Macaques," <i>J. Virology</i> 72(1): 164-169 (1998).		

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(Use several sheets if necessary)			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
C202	Murata, K., <i>et al.</i> , "Characterization of <i>in Vivo</i> Primary and Secondary CD8 <sup>+</sup> T Cell Responses Induced by Recombinant Influenza and Vaccinia Viruses," <i>Cell. Immunol.</i> 173(1):96-107 (1996).	
C203	Niewiesk, S., <i>et al.</i> , "Measles Virus-Induced Immune Suppression in the Cotton Rat ( <i>Sigmodon hispidus</i> ) Model Depends on Viral Glycoproteins," <i>J. Virol.</i> 71(10):7214-7219 (1997).	
C204	Picard, O., <i>et al.</i> , "Complication of Intramuscular/Subcutaneous Immune Therapy in Severely Immune-compromised Individuals," <i>J. Acquir. Immune Defic. Syndr.</i> , 4(6):641-643 (1991).	
C205	Puig, M., <i>et al.</i> , "CD4+ Immune Escape and Subsequent T-Cell Failure Following Chimpanzee Immunization Against Hepatitis C Virus," <i>Hepatology</i> , 44:736-745 (2006).	
C206	Puls, R.L. and Emery, S., "Therapeutic Vaccination against HIV: Current Progress and Future Possibilities," <i>Clin. Sci.</i> , 110(1):59-71 (2006).	
C207	Riddell, S.R. and Greenberg, P.D., "Principles for Adoptive T Cell Therapy of Human Viral Diseases," <i>Annu. Rev. Immunol.</i> 13: 545-586 (1995).	
C208	Riddell, S.R., <i>et al.</i> , "Restoration of Viral Immunity in Immunodeficient Humans by the Adoptive Transfer of T Cell Clones," <i>Science</i> 257 (1992).	
C209	Rowland-Jones, S., <i>et al.</i> , "HIV-specific Cytotoxic T-cells in HIV-exposed but Uninfected Gambian Women," <i>Nature Medicine</i> 1(1): 59-64 (1995).	
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C212	Smith, C.L., <i>et al.</i> , "Recombinant Modified Vaccinia Ankara Primes Functionally Activated CTL Specific for a Melanoma Tumor Antigen Epitope in Melanoma Patients with a High Risk of Disease Recurrence," <i>Int. J. Cancer</i> 113:259-266 (2005).	

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C213	Tartaglia, J., <i>et al.</i> , "Protection of Cats against Feline Leukemia Virus by Vaccination with a Canarypox Virus Recombinant, ALVAC-FL," <i>J. Virol.</i> 67(4):2370-2375 (1993).		
C214	Tascon, R.E., <i>et al.</i> , "Vaccination Against Tuberculosis by DNA Injection," <i>Nature Med.</i> 2(8):888-892 (1996).		
C215	Taylor, J. and Paoletti, E., "Fowlpox Virus as a Vector in Non-Avian Species," <i>Vaccine</i> 6:466-468 (1988).		
C216	Taylor, J., <i>et al.</i> , "Protective Immunity Against Avian Influenza Induced by Fowlpox Virus Recombinant," <i>Vaccine</i> 6:504-508 (1988).		
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C218	Thomson, S.A., <i>et al.</i> , "Delivery of Multiple CD8 Cytotoxic T Cell Epitopes by DNA Vaccination," <i>J. Immunol.</i> 160:1717-1723 (1998).		
C219	Thomson, S.A., <i>et al.</i> , "Recombinant Polyepitope Vaccines for the Delivery of Multiple CD8 Cytotoxic T Cell Epitopes," <i>J. Immunol.</i> , 157(2):822-826 (1996).		
C220	Tonini, T., <i>et al.</i> , "Current Approaches to Developing a Preventative HIV Vaccine," <i>Curr. Opin. Investig. Drugs</i> , 6(2):155-162 (2005).		
C221	Tsang, K.Y., <i>et al.</i> , "Generation of Human Cytotoxic T Cells Specific for Human Carcinoembryonic Antigen Epitopes From Patients Immunized With Recombinant Vaccinia-CEA Vaccine," <i>J. Natl. Cancer Inst.</i> 87(13):982-990 (1995).		
C222	Tsuji, M., <i>et al.</i> , "CD4 <sup>+</sup> Cytolytic T Cell Clone Confers Protection Against Murine Malaria," <i>J. Exp. Med.</i> 172(5):1353-1357 (1990).		
C223	Tsukamoto, K., <i>et al.</i> , "Dual-Viral Vector Approach Induced Strong and Long-Lasting Protective Immunity against Very Virulent Infectious Bursal Disease Virus," <i>Virology</i> 269(2):257-267 (2000).		
C224	Van den Eynde, B. and Van der Bruggen, P., "Peptide Database," <i>Cancer Immunity</i> , March 2001, online, retrieved from the Internet on June 23, 2003. <URL: <a href="http://cancerimmunity.org/peptidedatabase/tcellepitopes.htm">http://cancerimmunity.org/peptidedatabase/tcellepitopes.htm</a> >		

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<b>OTHER DOCUMENTS</b> ( <i>Including Author, Title, Date, Pertinent Pages, Etc.</i> )		
C225	Walker, B.D., <i>et al.</i> , "Long-term Culture and Fine Specificity of Human Cytotoxic T-Lymphocyte Clones Reactive with Human Immunodeficiency Virus Type 1," <i>Proc. Natl. Acad. Sci. USA</i> 86:9514-9518 (1989).	
C226	Wiley, J.A., <i>et al.</i> , "Production of Interferon- $\gamma$ by Influenza Hemagglutinin-Specific CD8 Effector T Cells Influences the Development of Pulmonary Immunopathology," <i>Am. J. Pathol.</i> 158(1): 119-130 (2001).	

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